



Mount Rushmore National Memorial

Burning of Slash Piles from Fuel Reduction Projects

STANDARD OPERATING PROCEDURES

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I. Project Goals and Objectives Summary

The slash piles to be burned in these projects were generated from mechanical fuel reduction operations. Naturally occurring fuels such as duff and litter may also be burned.

II. Project Unit Description

A. Location: Mount Rushmore National Memorial

B. Elevation 4500-5700 feet

C. Number of Piles: 1-6,000

D. Fuel Description: Tree boles (<10"dbh), branches, needles and duff

III. Project Organization

A. Personnel:

Project Leader: must be a qualified Single Resource Boss, i.e., Engine or Crew Boss.



Burn Boss: The Project Leader is the acting Burn Boss.

Crew: at least a total of 2 red-carded firefighters, including the designated Project Leader

B. Equipment: hand tools, ignition devices, and drip torch fuel.

IV. Scheduling

A. Proposed Ignition Date: November through March.

B. Projected Duration: This project is expected to take several weeks .

V. Safety

A. PPE: all burn personnel will wear leather boots or rubber snow boots, natural

material (cotton, wool, leather) or nomex outer wear and gloves, hardhat, and eye protection. It is recognized that protection from cold weather is as important as protection from the fire. Natural material clothing is safer than synthetic clothing for fire operations. Clothing contaminated by fuel and/or oil will be changed or cleaned before resuming pile burning operations. A fire shelter is not required as long as there is snow on the ground, but is recommended. All fire line gear should be on hand in the event the pile burn is converted to a wildland fire.

All standard wildland firefighter safety rules will be strictly enforced (see Fireline Handbook, NWCG Handbook 3). The only exception will be the permission to wear cold weather clothing, since there will be snow on the ground during pile burning, and the threat of cold weather injury outweighs the threat of burn injury.

VI. Project Prescription

A. Introduction

Due to the inconsistent winter weather patterns in the Black Hills, great caution needs to be exhibited when conducting winter pile burning activities. Snow cover will melt off in a matter of hours when strong foehn (Chinook) winds blow in with warmer temperatures. Pitch logs and stumps, when ignited, can burn for days emitting embers. Deep duff will creep extensively, even under snow cover. And last, depressed fine fuel moistures will sustain a wind driven surface fire, despite patchy snow. Each operational period, the checklist in section XIII should be completed and signed by the project leader.

Litter and duff may be allowed to burn in the vicinity of piles if there is a natural barrier which will prevent spread. In these cases, the pile burning may be allowed to consume fuels outside the pile ring. If spreading, these fires will be mopped up if Chinook winds surface or are forecasted, or if the snow melts.

B. Preparation

The piles must be compact and large enough to make ignition possible. They should be no larger than eight feet wide and six feet high. Piles that are extremely large may result in undesirable scorching of overhead tree branches. Piles may be covered prior to ignition. This will result in lower fuel moistures, which will reduce smoke, make ignition more efficient, burn all of the material more quickly, reduce burning time, and reduce mop-up if the snow melts.

C. Burning in the Boneyard

If slash is transported to the Boneyard for burning there, the pile may be larger than the size specified above, and logs larger than 10" may be burned. This pile will need to be monitored very frequently.

C. Prescription

Parameter	Prescription
Daily Minimum Temp.	The minimum temperature must be forecasted to dip below 32 degrees for <i>at least</i> two days following ignition
Daily Maximum Temp.	Pile burning when the maximum temperature is above 32 degrees is acceptable. Caution should be exercised if the maximum temperature at the actual site of the piles is much above 40 degrees. The snow depth and weather forecast for the next several days will be factors affecting this decision.
Snow Depth at ignition	At least 6 inches throughout the burn area. Pile burning may remove snow cover adjacent to piles
Cease Ignition Time	1500 hours (allow time for piles to burn down)
Weather Forecast	Continued cold and/or precipitation for next two to four days is preferred.
Pile	After initial ignition, rake to center establishing clean line around the burned slash; this also results in more complete combustion.
Patrol	Check burn piles regularly (at least once a day) until declared out.
Extinguishment	If snow melts to less than 2" the piles will be mopped up.

VII. Firing and Holding Plan

A. Firing: Ignite piles to burn as rapidly and intensely as possible to reduce smoke emissions.

B. Holding: scrape line around piles if necessary (fire can creep extensively in duff, even under snow). Exclude pitch logs and stumps when possible. Pitch logs extending from piles into other fuels should be sawed off or moved to prevent fire spread into non-targeted fuels.

VIII. Contingency Plan for Fire Escape

A. Notification: Northern Great Plains Dispatch Center (605) 393-8017, Mount Rushmore Dispatch (605) 574-3120, Pennington County Sheriff's Office (605) 394-2153, will be notified immediately whether on duty or off duty.

IX. Smoke Management and Air Quality Considerations

A. Smoke will flow upslope during sunny days. Smoke may "stall" and accumulate around the piles during day time precipitation. Smoke should settle around piles at night.

B. Minimum acceptable visibility and speed limits, or traffic control, for all roadways will be enforced by speed limit signs or traffic controllers.

C. "Smoke Ahead" signs (or similar) will be installed on roads if necessary.

Any compromised roadway conditions should be relayed to the Project Leader immediately, day or night, on shift or off shift. Project Leader Steve Ipswitch is available at (605) 745-1175 work, (605) 745-7372 residence, or (308) 862-1061 cell phone.

D. Patrol rangers will be asked to pay close attention to smoke-caused reduced visibility along roadways particularly at night

E. Rangers will be asked to go through Park Dispatch and notify the Project Leader anytime visibility is reduced to below specified standards in A. above. Project Leader will help coordinate traffic control.

X. Communications and Coordination

A. Northern Great Plains Dispatch Center (605) 393-8017 and Pennington County Sheriff's Office (605) 394-2153 will be notified the day of ignition.

B. Northern Great Plains Dispatch Center (605) 393-8017 will be continually updated on the fire situation on a daily basis until the fire is declared out.

XI. Summary and Reports

Each operational period, the GO/NO GO checklist should be completed and signed by the project leader.

The project leader will submit a short summary about the burn to the Fire Management Officer and the Superintendent that describes status of execution and any rehabilitation needs.

The project leader will track, in detail, the daily accomplishments, hours, and costs using the spread sheet developed for that purpose.

The project leader will submit a DI-1202 no less than 5 days after the end of each pile burning session, and entered into SACS no less than 10 days after the end of each session. As more piles are burned, the SACS entry will be updated with current information.

XII. Rehabilitation

A. Burn piles can temporarily sterilize soils due to high sub-surface temperatures and residence time. This creates a disturbed site ideal for invasive exotic plant species,

B. After piles are declared out, unburned material such as charred sticks will be scattered. The soil surface below the pile will be scarified (raked or otherwise turned) and duff and/or litter will be scraped back over the pile site and any scraped control lines. This will camouflage the burned area and bring seeds and other organic material into the burned area which may help them recover more quickly and reduce the invasion by exotics. If the ash is very deep, it may be advisable to remove some of it before spreading duff and/or litter over the pile. Seeding with native plant species will be considered.

C. Rehabilitation of areas burned by the piles will be scheduled for the months of April or May after pile burning. This will ensure rehabilitation before the growing season and after snow melt.

D. Northern Great Plains Fire Monitors will qualitatively assess the recover of areas burned by the piles that fall within established vegetation plots.

XIII. Slash Pile Go/No Go Checklist

(to be completed prior to ignition)

Date: _____

Criteria	Yes	No
1. Has the <i>minimum</i> temperature been forecast to be less than 32 degrees for the next two days?		
2. Is there <i>at least</i> 4 inches of snow on the ground, and will it remain for at least three days?		
3. Have pitch-logs, or stumps been removed from the piles?		
4. Is the park's wildland fire engine able to respond to the area if necessary?		
5. Have smoke management considerations been met?		
6. Are current and forecasted weather predictions for the next four burning periods favorable?		
7. Have Northern Great Plains Dispatch Center (605) 393-8017 and Pennington County SO (605) 394-2153 been notified?		
8. Has a safety briefing for all project personnel been given?		
9. Are all required personnel and equipment on site and fire ready?		
10. Will you be finished igniting by 1500 hrs?		
11. At the end of the day will you scrape all piles into the center leaving a clean line around the burned slash?		
12. Have patrols been arranged?		
<i>BEFORE IGNITION, THE BEST ANSWER TO ALL OF THE ABOVE IS "YES"</i>		

Ignition Recommended by Project Leader _____
Signature

In-Park Supervisory Clearance _____
Signature